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## STATEMENT OF BASIS for BUCKEYE PORT READING TERMINAL

### TITLE V OPERATING PERMIT RENEWAL

Program Interest (PI): 17996 / Permit Activity Number: BOP100001

#### I. FACILITY INFORMATION

Buckeye Port Reading Terminal is located at 750 Cliff Road, Port Reading, NJ, Middlesex County and consists of a petroleum refinery. The facility is owned and operated by Buckeye.

The facility is classified as a major facility based on its potential to emit 2515 tons per year of volatile organic compounds, 566 tons per year of nitrogen oxides, 564 tons per year of carbon monoxide, 340 tons per year of sulfur dioxide, 125 tons per year of total suspended particulates, 187 tons per year of particulates under 10 microns, and 0.41 tons per year of lead to the atmosphere.

It is also classified as a major hazardous air pollutant (HAP) facility. A major HAP emitting facility is designated as major when the allowed emissions exceed 10 tons per year of any individual hazardous air pollutant or 25 tons per year of any combination of individual hazardous air pollutants that may be emitted simultaneously.

This permit allows individual hazardous air pollutant to be emitted at a rate to not exceed: 0.88 tons per year of carbonyl sulfide, 0.5 tons per year of phenol, 3.74 tons per year of Trimethylpentane, 4.92 tons per year of Benzene, 7.5 tons per year of Hexane, 109 tons per year of Methyl tert-butyl ether, 8.41 tons per year of Toluene, 1.25 tons per year of Xylene, 0.03 tons per year of Arsenic, 0.06 tons per year of Cadmium, 0.04 tons per year of Cobalt, 0.01 tons per year of Mercury, 0.68 tons per year of Nickel, 0.003 tons per year of Polycyclic Organic Matter, and 34.2 tons per year of Cyanide Compounds.

#### II. AREA ATTAINMENT CLASSIFICATION

The Federal Clean Air Act (CAA) sets National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are particulate matter, ground-level ozone, carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), and lead. The CAA also classifies areas as "attainment" or "nonattainment" for each criteria pollutant, based on the magnitude of an area's problem. Nonattainment classifications are used to specify what air pollution reduction measures an area must adopt, and when the area must reach attainment. Currently, the entire State of New Jersey is designated as nonattainment for the 8-hour ozone NAAQS and portions of the State are designated as nonattainment for the annual and daily PM<sub>2.5</sub> and the SO<sub>2</sub> NAAQS. This facility is located in a nonattainment area of the State in which the ambient air concentration exceeds 8-hour ozone NAAQS and annual and daily PM<sub>2.5</sub> NAAQS.

#### III. BACKGROUND AND HISTORY

The equipment that emits air contaminants from this facility include: fluid catalytic cracking unit, emergency generators, floating roof storage tanks, truck and marine loading rack equipped with carbon adsorption system with greater than 95% efficiency, and boilers.

Consistent with N.J.A.C. 7:27-22.30(d) 1, Table 1 - Operating Permit Revision History (located at the end of this document) provides a summary of all the changes that have been incorporated into the operating permit through seven-day notice changes, administrative amendments, minor modifications, or significant modifications during the past five-year term of the initial operating permit or the most recent renewal thereof. Please refer to the attached explanation sheet for the structure and configuration of conditions of approval, included in the Facility Specific Requirements section of this permit.

As part of the 5-year renewal review and the public comment process, the Department requires major facilities to submit facility-wide emission trends for major sources of air contaminants. These graphs for the last five years are included at the end of this document.

#### IV. BASIS FOR MONITORING AND RECORDKEEPING REQUIREMENTS

The facility's operating permit includes monitoring, recordkeeping and reporting requirements that are sufficient to demonstrate the facility's continued compliance with the applicable requirements consistent with the following:

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1. Provisions to implement the testing and monitoring requirements of N.J.A.C. 7:27-22.18, the recordkeeping and reporting requirements of N.J.A.C. 7:27-22.19, and all emissions monitoring and analysis procedures or compliance assurance methods required under the applicable requirements, including any procedures and methods promulgated pursuant to 40 CFR 64; and
2. Where the applicable requirement does not require direct periodic monitoring of emissions, the Department requires periodic monitoring of surrogate parameters sufficient to yield reliable data from the relevant time period that are representative of the facility's compliance with the permit.
3. In situations where the underlying applicable requirement did not specify any periodic testing or monitoring, the following factors were considered in the evaluation and determination of the appropriate methodology for compliance demonstration for each emission unit:

Pollutant's potential impact on public health and environment.

Emission unit and control device (older, less reliable equipment generally require more monitoring to ensure ongoing compliance).

Compliance history and margin of compliance.

Emissions variability and process stability (emissions units with highly variable process rates or materials generally require more monitoring to ensure ongoing compliance)

Quantity of emissions (emissions units that will have more impact on the environment generally require more monitoring to ensure ongoing compliance).

### V. APPLICABLE STATE AND FEDERAL RULES

The facility is subject to New Jersey Air Pollution Control Regulations, codified in N.J.A.C. 7:27-1 through 34, as applicable. A complete text of these regulations is available at:

<http://www.nj.gov/dep/agm/rules27.html>

The facility is also subject to Federal regulations listed below.

NSPS Subpart A:	General Provisions
NSPS Subpart Kb:	Volatile Organic Liquid Storage Vessels
NSPS Subpart J:	Petroleum Refineries
MACT Subpart A:	General Provisions
MACT Subpart R:	Bulk Gasoline Distribution terminals
MACT Subpart CC:	Standard from HAP from Petroleum Refineries
MACT Subpart G:	Synthetic organic chemical manufacturing industry for process vents, storage vessels, transfer operations and wastewater.

The Greenhouse Gas (GHG) emissions from this facility are 1,254,093 TPY CO<sub>2</sub>e and there are no GHG emissions increase. The facility is not subject to PSD regulations codified at 40 CFR 52.21.

The facility is subject to a Consent Decree, Civil Action No. "Case 2:12-cv-02335-DMC-MF." The pending modification, BOP120003, shall incorporate the requirements of the Consent Decree into the Operating Permit.

### VI. FACILITY'S COMPLIANCE STATUS

The Responsible Official at the facility has certified that the facility currently meets all applicable requirements of the Federal Clean Air Act and the New Jersey Air Pollution Control Act. Based on this certification, the Department's evaluation of the information included in the facility's application, and a review of the facility's compliance status, the Department has concluded that this air pollution control operating permit should be approved. Prior to the expiration of the Operating Permit's five-year term, the facility will be required to apply for a renewal, at which time the Department will evaluate the facility and issue a public notice with its findings.

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#### VII. EXEMPT ACTIVITIES

The facility's operating permit does not include exempt activities such as office and interior maintenance activities, maintenance shop activities, food preparation facilities, cafeterias and dining rooms, etc. A complete list of exempt activities, as allowed by the Operating Permit rule, can be found at N.J.A.C. 7:27-22.1.

Table 1 - Operating Permit Revision History

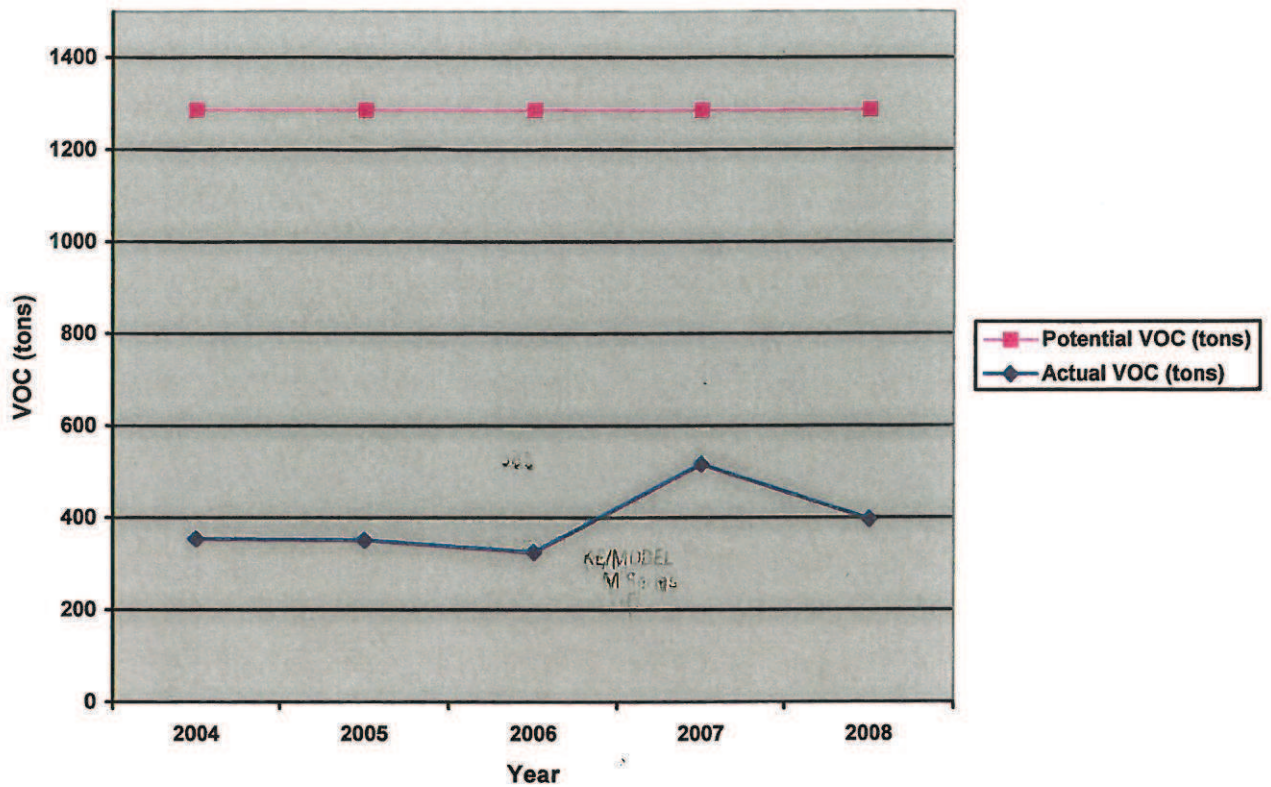
Facility Name:	Buckeye, Port Reading Terminal			PI Number:	17996	Activity Number:	BOP100001
Permit Term	From:	April 16, 2006	To:	April 15, 2011			

Permit Activity Number	Type of Revision	U/BP	Description of Revision	Approval Date
BOP070002	Minor Mod.	U1	NSPS Sulfur constraints for the FCCU during Feed Study	7/11/07
BOP060007	Significant Mod.	U8	Reconstruction and operation of Storage Tank 7908 with a floating roof.	9/17/07
BOP060002	Significant Mod.	U1	FCCU Feed Rate Increase	10/15/07
BOP080001	Minor Mod.	U1	The facility proposes to conduct trials of a NOx reducing additive in the facility's Fluid Catalytic Cracking Unit (FCCU) designated as U1	3/13/08
BOP080002	Minor Mod.	U8	Tank conversion Tank 1217 from an external floating roof to an internal floating roof tank	7/9/08
BOP080003	Minor Mod.	U8	Allows an outside vendor to perform tank cleaning operation in tank 1911 using portable equipment including mix tank, centrifuge, oil/water separator, boiler and 4 frac tanks.	9/2/08

BOP080004	Minor Mod.	U22	Allows an outside vendor to bring in nitrogen vaporization trailer in Hess's property using portable boiler and a diesel engine.	10/07/08
BOP080005	Minor Mod.	U23	Allows an outside vendor to bring in portable pipe cleaning apparatus in Hess's property including a portable high pressure water pump powered by a diesel engine.	12/09/08
BOP080006	Minor Mod	U8	Increase in throughputs for the Tanks T-1224 and T-1226 to accommodate loading of marine diesel fuel to tugboat fuel tanks.	4/16/09
BOP090001	Minor Mod	U24	Allows Hess to bring in a dehumidifier equipment powered by a 170 HP diesel engine that is owned and operated by an outside vendor.	8/4/09
BOP090002	Minor Mod	U21	Add 6 new equipment to U21 Portable Tank Operation including mix tank, centrifuge, and 4 additional frac tanks. Delete the portable Boiler.	11/18/09
BOP090003	Admin. Amendment	U8	Establish requirements to limit VOC emissions from the roof landing of the floating roof storage tanks to less than 5 tpy per tank	11/30/09
BOP100002	Minor Mod	U3001 U5001	Allows Hess to bring in a temporary electric generators and compressor equipment to provide power during turnaround operation. The equipment are owned and operated by an outside vendor.	5/18/2010
BOP090005	Minor Mod.	U1	<p>This minor modification includes the requirements for the following proposed projects:</p> <p>Regenerator Cooler. This project consists of adding a heat exchanger to divert catalyst from the bottom of the FCCU's regenerator, cool the catalyst, and re-inject the cooled catalyst into the regenerator.</p> <p>Main Fractionator Upgrades. Hess plans to install new and upgrade certain existing fractionator trays; upgrade pump seals, improve fractionator liquid pump-around and cooling, and install additional steam sparging capability.</p>	6/3/2010

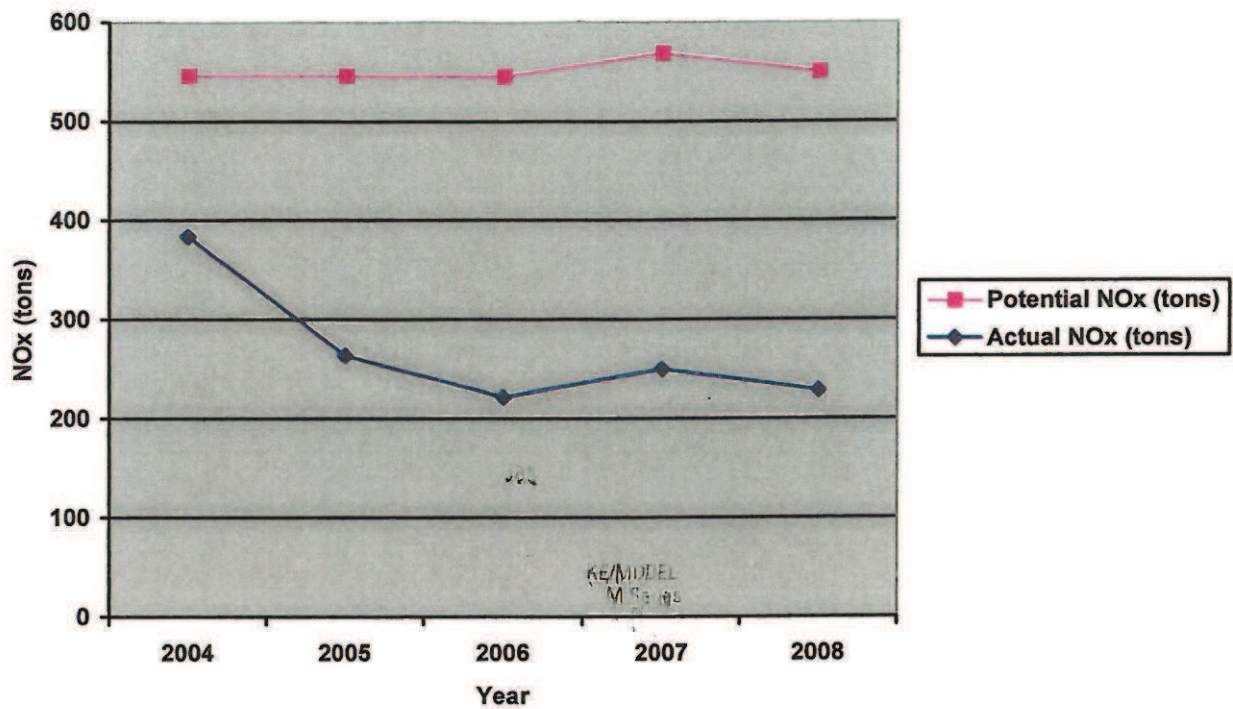
			<p>Sulfuric Acid Alkylation Upgrades. Hess plans to optimize cooling and chilling capacity; improve neutralization drum performance and decrease corrosion and fouling of the unit; improve fractionation; and increase undersized piping, pumps, and valves.</p> <p>Amine System Upgrades. Hess plans to increase the size of the steam piping from the amine regenerator reboiler; install an additional fuel gas cooler to supplement the existing cooler; and to install tie-ins in the LPG treating section to allow for future expansion of the LPG treater.</p>	
BOP100003	Minor Mod.	U5 U16	Remove stack testing requirements and emission limits for methyl tert-butyl ether (MTBE) for the refinery's Truck and Marine Loading Operations from the operating permit	7/13/2010
BOP110001	Admin. Amendment	U22 U23 U3001 U5001	Add requirements for portable equipment at the facility	1/19/2011
BOP110002	Significant Modification	U1	Change fresh feed rate limit for FCCU	9/7/2012
BOP120002	Minor Modification	U8	Increase gasoline throughput to 100,000,000 gallons/year for Tanks 1229 and 1231	2/27/2012
BOP130001	Minor Modification	U6001	Vent LPG transfer hoses to the atmosphere instead of the flare	6/8/2013
BOP120001	Significant Modification	U6	Convert tank 1218 to waste water equalization tank	10/25/2013
BOP130003	Minor Modification	U6001	Increase the VOC emissions from 0.13 tons/yr to 1.1 tons/yr to increase in railroad car unloading from 500 to 4000 cars.	11/26/2013
BOP130004	Admin Amendment		Transfer of ownership from Hess to Buckeye and change in responsible officials	12/14/2013
BOP140001	Minor Modification	U6001	Correction to annual VOC emission rate (tons/yr)	

## 5-Year Trend - Potential vs Actual VOC Emissions



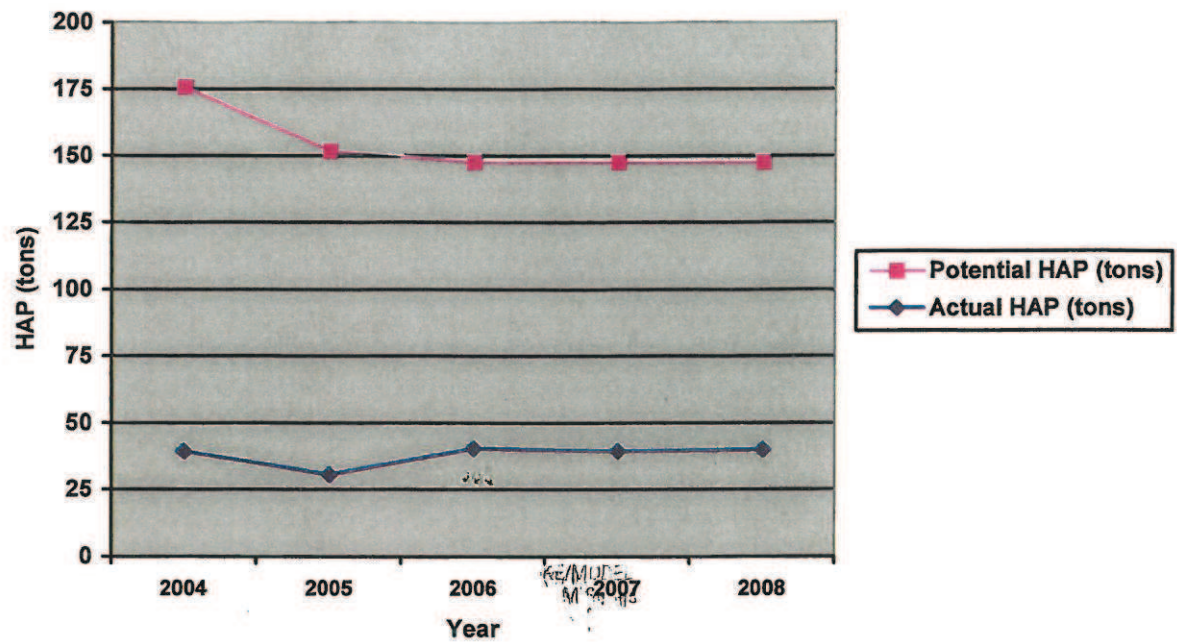


### 5-Year Trend - Potential vs Actual NOx Emissions

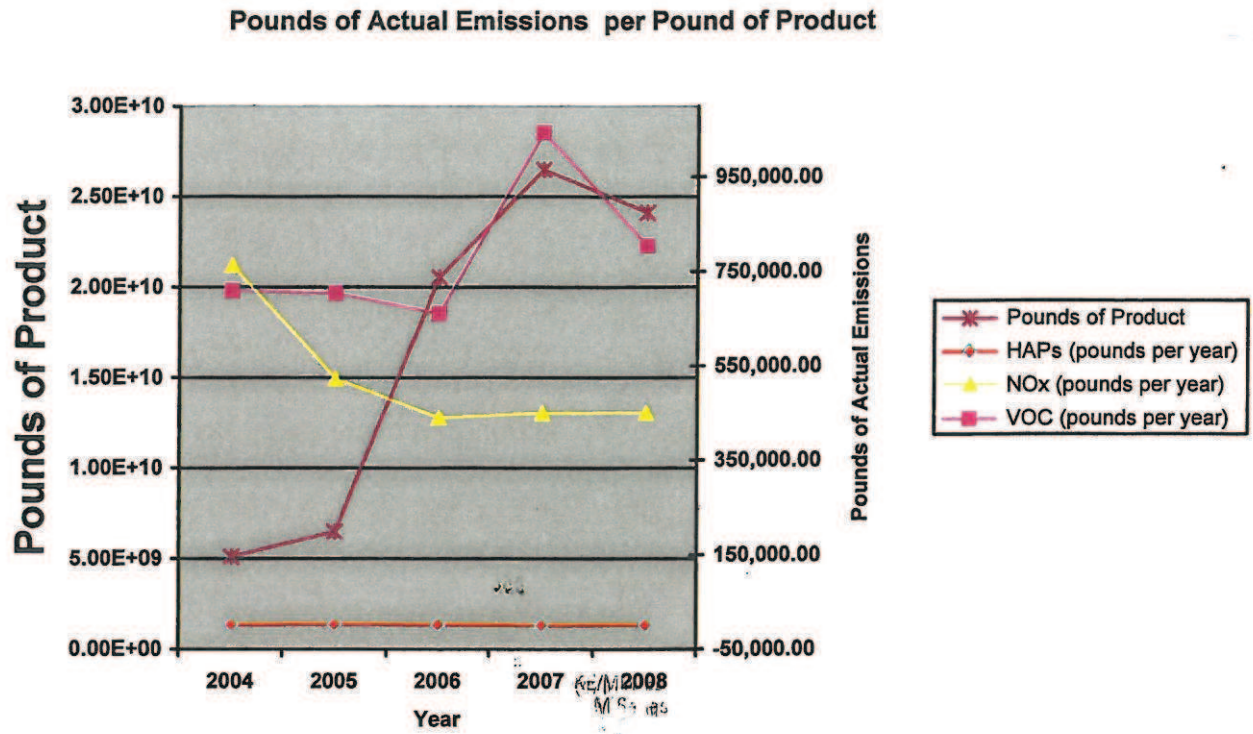




### 5-Year Trend - Potential vs Actual HAP Emissions



## Application to Renew an Air Operating Permit



FACILITY NAME (FACILITY ID NUMBER)

BOP050001

Activity Number  
(assigned by the  
Department)

## New Jersey Department of Environmental Protection Facility Specific Requirements

Emission unit number  
(assigned by the  
facility)

Brief description of emission unit

Emission Unit: U1 25 MM BTU/hour Boiler burning Fuel Oil and Natural Gas

Operating Scenario: OS Summary OR OSXX Boiler burning Fuel Oil

OS Summary lists all rules and requirements that apply to an emission unit, regardless of operating scenarios. Emission unit may contain one or more pieces of equipment and the corresponding operating scenarios

OSXX denotes the operating scenario number and lists the rules and requirements that apply to a particular scenario. An operating scenario represents various ways (or scenarios) a piece of equipment can operate.

Records to be kept

Submittal  
requirement

Item  
Number

Description of applicable  
requirement

Air contaminants

Monitoring method to  
ensure compliance

Actions to be  
taken by the  
facility

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Conduct a comprehensive stack test at emission point PTXX at least 18 months prior to the expiration of the approved operating permit to demonstrate compliance with the <u>CO, NOx, TSP and VOC</u> emission limits.[N.J.A.C. 7:27-22.16(e)]	Other: <u>Stack emission testing</u> . Stack test shall be conducted for CO, NOx, TSP, and VOC emissions (add language as needed). Based on any 60 minute period. [N.J.A.C. 7:27-22.16(e)]	Other: <u>Stack test results</u> . [N.J.A.C. 7:27-22.16(e)]	Stack Test - <u>Submit a protocol, conduct stack tests, submit results</u> : As per the approved schedule. <u>Submit a stack test protocol to the Bureau of Technical Services (BTS)</u> at PO Box 437, Trenton, NJ 08625 at least 30 months prior to the expiration of the approved operating permit. [N.J.A.C. 7:27-22.18(e)] and [N.J.A.C. 7:27-22.18(h)]

Rule citation (subchapter, section, and paragraph) for the applicable requirement

Rule citation for the monitoring requirement

Rule citation for the recordkeeping requirement

Rule citations for the submittal/action requirement